Explanatory Remarks

Please amend claims as indicated hereinabove, and note that the amendments given here are based upon the previously submitted Response B, as filed with the Request for Continuing Examination Under 37 CFR 1.114.

For purposes of this paper Claims 5-6, 8-14, 16-18, 20, and 23 (a total of 14 claims) remain pending.

Objection to the Specification

3. The specification stands objected to as failing to provide proper antecedent basis for the claimed subject matter. The Examiner states that he is unable to find the basis in the specification for the claimed terminology of "calcination is carried out in the presence of greater than about 1,000 ppm of sodium". Applicant is requested to provide where in the original specification such basis resides.

In response to the objection the Applicant respectfully directs the Examiner to page 13, second full paragraph bridging to page 14, and to the amendment hereinabove requested to that location to clarify that the sodium is included during calcination, and operates to affect the properties of the post-calcined product. At this location can be found the statement (with markings showing the amendments requested hereinabove):

> **"Sodium, especially in high concentrations of greater than about 1,000 ppm, preferably greater than about 10,000 ppm, has been shown to improve the efficiency of the rheology modification agent with clay. Such is preferably present or employed in an amount from about 10,000 ppm to about 100,000 ppm. Interestingly, the presence of sodium in an uncalcined starting material such as a hydrotalcite operates to destroy or substantially reduce reactivity of the post-calcined material with clay, i.e., ~~it~~ the sodium prevents the material from being "activated" during its calcination, "activation" being defined as ~~being altered~~ alteration to enable ~~it~~ the material to absorb anions, particularly chromate, under the "CAT" test...."**

Applicant believes that these minor modifications merely provide clarification to the disclosure and more clearly support the claims and do not insert any new matter into the specification. It is urged by Applicant that these changes overcome the objection to the specification and its withdrawal is respectfully requested.

Claim Rejections

Rejection Under 35 USC 112

4-5. Claims 5-6, 8-14, 16-18, 20 and 23 stand rejected under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. First, the Examiner urges that Claims 5 and 18 include two definitions for M' and M" in the claim.

By this paper amendments have been requested to Claims 5 and 18 to eliminate any confusion concerning the metes and bounds of the subject matter sought to be patented. It is believed that the amendments clarify Applicant's intent and that the claims as amended fully meet the requirements of the statute. Withdrawal of this rejection is now respectfully requested.

Second, Claim 23 stands rejected as being further indefinite on the basis that it stands dependent upon Claim 18. Applicant thanks the Examiner for pointing out this obvious error on the part of the undersigned, and notes that appropriate amendment has now been requested to reference Claim 5, which includes clay and water, rather than the (dry) rheology modification agent of Claim 18.

Rejection Under 35 USC 102

6-7. Claim 18 stands rejected under 35 USC 102(b) as being anticipated by Norman et al., U.S. Patent 3,948,809. The Examiner urges that Norman et al., in the examples, claims, and at column 2, line 25, disclose the calcinations of bauxite waste liquors after addition of sodium carbonate or sodium hydroxide at

temperatures of 400°C to 900°C. From this reading the Examiner concludes that the disclosure reads on the compositions and processes.

Applicant continues to respectfully traverse the Examiner's bases of rejection with regard to Norman et al. and hereby presents a more detailed discussion of this issue for the Examiner's consideration.

Norman et al. is a process for preparing products such as sodium aluminate, sodium oxide and possibly others in which a bauxite or red mud stream is leached via addition of a caustic solution. An alkali aluminum hydroxide solution is formed and any resulting solids are than filtered out and discarded. Following the precipitation and filtration, sodium carbonate is then mixed and dissolved in the resulting filtered liquid. This liquid stream is dried and finally calcined at 400°C to 900°C, but preferably at 600-700°C. Notably, no magnesium is added to this process at any point.

The Applicant's process generally begins with a sodium aluminate solution to which magnesium oxide is added. Mixing this combination produces a mixed-metal double hydroxide ("hydrotalcite-like") slurry. This slurry is filtered to extract the solids. It is these extracted solids that are dried and then mixed with sodium carbonate, which produces a product which can be calcined at 750° to 1500°C to produce Applicant 's rheology modification agent. The liquid from the slurry is not calcined, as in Norman et al., but rather recycled to the beginning of the process or discarded.

The Examiner seems to urge that, since Applicant states that a bauxite waste stream "may" contain magnesium, it must be assumed that using such a bauxite stream in Norman et al.'s invention would inherently result in Applicant's invention. Applicant holds that this is incorrect, and that inserting that assumption (which may not be correct for many or even most bauxite waste streams anyway) into the Norman et al. invention still would not produce Applicant's invention. Simply put, Norman et al. calcines the dried product prepared from the liquid of the filtration step; in contrast, Applicant calcines the solid of the filtration step. Thus, even if magnesium were present in the bauxite waste stream in Norman et al., that magnesium would be expected to remain in

the discarded solids, and therefore not be a part of the calcined solids later in the process. In that case a magnesium compound conforming to the formula of Applicant's claims could not be formed.

Applicant believes that there is therefore no reasonable way to interpret Norman et al. as anticipating Applicant's invention, as anticipation is defined by the statute, since Norman et al.'s process cannot result in Applicant's composition, regardless of starting material. Accordingly, Applicant believes that this rejection has now been rendered moot and its withdrawal is respectfully requested.

With this Response C it is believed that all fourteen (14) currently pending claims as constructed hereinabove are now fully in condition for allowance. Such allowance of all claims is most respectfully requested.

Respectfully submitted,

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